

Claims

- [c1] 1.A cam cover gasket comprising:
a generally compliant first material having an upper surface for contact with a cover and a lower surface for contact with an engine head;
a generally rigid bracket frame of a second material connected with said first material; and
a solenoid actuator connected with said second material.
- [c2] 2.A gasket as described in claim 1, wherein said first material is a polymeric material and said second material is a metal.
- [c3] 3.A gasket as described in claim 1, wherein said first material includes a first polymeric material and a second polymeric material.
- [c4] 4.A gasket as described in claim 3, wherein said second polymeric material is an elastomeric material.
- [c5] 5.A gasket as described in claim 1, wherein said gasket encapsulates wiring utilized to power said solenoid actuator.
- [c6] 6.A gasket as described in claim 5, wherein said gasket has an external terminal for connection with an electrical connector.
- [c7] 7.A gasket as described in claim 1, having a plurality of solenoid actuators connected with said gasket to control a plurality of rocker arms.
- [c8] 8.A gasket as described in claim 1, wherein said bracket frame further includes a bracket support connected with said frame for supporting said solenoid actuator.
- [c9] 9.A cam cover gasket comprising:
a generally compliant first material having an upper surface for contact with a cover and a lower surface for contact with an engine head;
a generally rigid bracket of a second material connected with said first material;
a fastener sleeve penetrating said first and second materials and being connected with said second material; and

a solenoid actuator connected with said second material having a lever arm for pivotally activating a rocker arm between first and second modes of operation.

- [c10] 10. An engine, comprising:
a combustion chamber;
a head with a passageway fluidly connected with said chamber;
a valve controlling fluid communication between said chamber and said passageway;
a rocker arm for activating said valve, said rocker arm having first and second modes of operation of said valve;
a cover enclosing said rocker arm having a surface for mating with said head;
a gasket captured between said cover mating surface and said head; and
a solenoid actuator for activating said rocker arm between said first and second modes of operation being connected with said gasket.
- [c11] 11. An engine as described in claim 10, wherein said gasket includes a generally rigid bracket frame for supporting said solenoid.
- [c12] 12. An engine as described in claim 11, wherein said gasket is fabricated from a generally soft material and a generally rigid material providing said bracket frame.
- [c13] 13. An engine as described in claim 12, wherein said soft material is a polymeric material and said rigid material is a metal.
- [c14] 14. An engine as described in claim 13, wherein said soft material includes a first polymeric material and a second polymeric material.
- [c15] 15. An engine as described in claim 14, wherein said second polymeric material is an elastomeric material.
- [c16] 16. An engine as described in claim 10, wherein said gasket encapsulates wiring utilized to power said solenoid.
- [c17] 17. An engine as described in claim 16, wherein said gasket has an external terminal for connection with an electrical connector.

- [c18] 18. An engine as described in claim 10 having a plurality of valves, a plurality of rocker arms and a plurality of solenoids connected with said gasket to control a plurality of rocker arms.
- [c19] 19. An engine as described in claim 11, wherein said bracket frame further includes bracket supports connected with said frame for supporting said solenoid.
- [c20] 20. An engine as described in claim 12, wherein said gasket soft material has a generally C-shape cross-section and said bracket frame has an end captured within said C-shape cross-section.
- [c21] 21. An engine as described in claim 10, further including a cam shaft for rotating a cam to activate said rocker arm, said cam shaft being rotatively connected on said head.
- [c22] 22. An engine as described in claim 11, wherein said generally rigid bracket frame is connected to a fastener sleeve.
- [c23] 23. An engine as described in claim 22, wherein said bracket frame is connected to said fastener sleeve by an interference fit.
- [c24] 24. An internal combustion engine comprising:
a plurality of combustion chambers;
a head with a plurality of respective passageways fluidly connected with said combustion chambers;
a plurality of valves controlling fluid communication between said respective passageways and said chambers;
a plurality of respective rocker arms for activating said valves, said rocker arms having first and second modes of operation of said valves;
a cover enclosing said rocker arms having a surface for mating with said head;
a gasket captured between said cover mating surface and said head, said gasket being fabricated from a generally soft material and a generally rigid material providing a bracket frame and said gasket encapsulating power supply wiring;
and
a plurality of solenoid actuators for activating respective rocker arms between

said first and second modes of operation being connected with said gasket rigid bracket frames and being powered by said wiring encapsulated within said gasket.

[c25] 25. An engine as described in claim 24, wherein said gasket includes fastener sleeves which are fixedly connected with said generally rigid bracket frame.

[c26] 26.A method of assembling a portion of an internal combustion engine comprising:

- providing a head with a passageway fluidly connected with a combustion chamber and a valve controlling fluid communication between said chamber and said passageway;
- providing a rocker arm for activating said valve, said rocker arm having first and second modes of operation of said valve;
- placing a gasket on said head, said gasket having a mating surface for said head and a generally opposite mating surface for a cam cover, said gasket being fabricated from a generally soft material and also having a generally rigid material providing a bracket frame, said bracket frame being connected with a solenoid actuator for activating said rocker arm between said first and second modes of operation; and
- enclosing said head with a cam cover.

[c27] 27.A method as described in claim 26 further including wiring said solenoid by passing a wire enclosed within said gasket between said solenoid and an external portion of said gasket.